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Correlates of a Good Death and the Impact of Hospice Involvement: Findings from the National Survey of Households Affected by Cancer

John G. Cagle, PhD, MSW¹, Jolynn Pek, PhD, MA, M.Soc.Sc.², Maggie Clifford, MSW³, Jack Guralnik, MD, MPH, PhD¹, and Sheryl Zimmerman, PhD⁴

¹University of Maryland, Baltimore

²York University, Toronto Canada

³Florida State University, Panama City

⁴University of North Carolina at Chapel Hill

Abstract

Purpose—Knowing how to improve the dying experience for patients with end-stage cancer is essential for cancer professionals. However, there is little evidence on the relationship between clinically relevant factors and quality of death. Also, while hospice has been linked with improved outcomes, our understanding of factors that contribute to a “good death” when hospice is involved remains limited. This study (1) identified correlates of a good death; and, (2) provided evidence on the impact of hospice on quality of death.

Methods—Using data from a survey of US households affected by cancer (N=930, response rate 51%), we fit regression models with a subsample of 158 respondents who had experienced the death of a family member with cancer. Measures included quality of death (good/bad) and clinically relevant factors including: hospice involvement, symptoms during treatment, whether wishes were followed, provider knowledge/expertise and compassion.

Results—Respondents were 60% female, 89% White, and averaged 57 years old. Decedents were most often a respondent's spouse (46%). While 73% of respondents reported a good death, Hispanics were less likely to experience good death ($p=.007$). Clinically relevant factors, including hospice, were associated with good death ($p<.05$) -- an exception being whether the physician said the cancer was curable/fatal. With adjustments, perceptions of provider knowledge/expertise was the only clinical factor that remained associated with good death.

Conclusions—Enhanced provider training/communication, referrals to hospice and greater attention to symptom management may facilitate improved quality of dying. Additionally, the cultural relevance of the concept of a “good death” warrants further research.

Address correspondence to: John G. Cagle, Ph.D., M.S.W., Assistant Professor, University of Maryland, Baltimore, School of Social Work, 525 West Redwood Street, 3W13, Baltimore, MD 21201; jcagle@ssw.umaryland.edu.

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Keywords

Provider Communication; Quality of Death; Hospice; Palliative Care; End of Life; Good Death

Background

Oncologists and other cancer care providers have long been interested in ways to diminish suffering and improve the quality of care at the end of life. In particular, ensuring that dying persons experience a good death is generally acknowledged as a worthy goal for providers, policymakers, and society as a whole.[1] Although there is a growing body of research on what contributes to the quality of dying and death, our understanding of these relationships remains incomplete.[2-4] In particular, there is little population-based evidence on end of life outcomes among cancer patients in the US. Furthermore, while previous work has shown that hospice involvement is associated with better outcomes at the end of life, the drivers of this association are less clear. This study builds on existing research to identify correlates of a good death using a nationwide sample from the National Survey of Households Affected by Cancer (NSHAC). The goals of this research study were to: (1) identify clinically relevant correlates associated with quality of death; and (2) “unpack” the relationship between hospice involvement and quality of death. Further clarification of the concept of good death and its antecedents is imperative for clinicians and researchers interested in improving care at the end of life.

At the end of the 20th century, several prominent studies concluded that the state of end of life care in America was inadequate.[5] These and similar findings led to a nationwide call to enhance the quality of care for dying persons.[6,7] To answer these clarion calls, researchers, scholars and practitioners have endorsed a multi-focal campaign targeting various levels of change, ranging from individual attitudes and behaviors to professional education and policy.[8,9] However, to improve the quality of dying and death, we must first understand what contributes to a good versus bad death.

Providers and policymakers are especially interested in clinically relevant factors that can improve the quality of a patient's dying experience – particularly factors that are modifiable and amenable to intervention. Such factors include patient-provider communication, pain and symptom management, medical training/expertise, referrals to hospice or other palliative care services, and ensuring that patient goals of care match prescribed treatments. Based on previous work, we know that a good death generally consists of: good pain and symptom management; clear decision-making; respect for one's personhood; trust in health care providers; a sense of closure, completion or preparedness; minimizing family burden; being able to contribute to others; and maintaining control.[3,10-13] Hospice care, in any setting, is known to be associated with improved quality of death.[14,15] Additionally, the amount of time and explanation provided by medical personnel and the degree of adherence to proposed treatment plans have been linked to quality of death.[16] Similarly, control of distressing physical and psychological symptoms,[11,17,18] and empathetic medical professionals[10] are associated with perceptions of a good death.

Our study responds directly to Hales and colleagues[6] who call for studies “to identify determinants of the quality of dying and death” for the purposes of guiding clinical practice and policymaking. While our understanding of factors that contribute to a good death is improving, few studies have explored the relationship between clinically relevant variables and a good death using retrospective reports from population-based studies. Furthermore, our understanding of why hospice is consistently associated with better outcomes at the end of life remains incomplete. Our study provides an important, data-driven perspective to these pressing questions.

Methods

We analyzed data from the NSHAC, a nationwide survey initiated by the Kaiser Foundation, Harvard School of Public Health and USA Today. The survey consisted of telephone interviews conducted by International Communications Research of Media, PA during a six week period in the Summer/Fall of 2006. Participants were eligible if they were 18+ years old and someone in their household had a diagnosis of, or had been treated for, any type of cancer within the past five years. Using random-digit dialing, the study elicited a probability sample of 930 respondents with a response rate of 51%. Of the 930 respondents, 179 reported that their family member with cancer had died. Among this group, 159 provided a response to the main outcome of interest, whether the death of their family member was good or bad (two refused and 18 replied *don't know*). An outlier where the decedent was 9 years old was also removed, leaving an analytic sample of 158 (17% of the original sample; 89% of the decedent sample). Analyses were thus carried out on these 158 respondents. The full survey instrument is available at the Kaiser Family Foundation website.[19]

Measures

Demographics—Respondents provided information about themselves, including age, gender, race, ethnicity, income, education and marital status. They also reported data on the decedent's gender, age and relationship to the respondent. To reduce the dimensionality of certain variables (and avoid sparseness in response patterns), respondents' relationship to decedents was recoded into a binary variable, *spouse* or *non-spouse*. Respondents also provided information on decedent's length of diagnosis (*in the past year*, *1-3 years ago*, *3-5 years ago*, or *5+ years ago*).

Respondents provided information on their perceptions of the decedent's religiosity on a 4-point scale ranging from *not at all important* to *very important* and categorized decedent's optimism of surviving cancer as *mostly optimistic* or *mostly pessimistic*. Respondents were also asked whether the impact of decedent's experience with cancer on their own lives: *had any positive impact*, *only a negative impact*, or *don't know*. Finally, respondents indicated the importance of religion in helping them get through the decedent's cancer experience on a 4-point scale (*not at all important* to *very important*).

Clinically Relevant Factors—Respondents provided information about clinically relevant factors including their experience with health professionals in the context of decedent's illness. They indicated *yes* or *no* to whether doctors told the patient that the illness could be cured and whether it was fatal. They indicated whether doctors gave

attention to decedent's well-being outside of medical care (*yes/no*) and whether the physician provided conflicting information regarding decedent's illness (*yes/no*). Perceptions about the decedent's experience with three symptoms were also measured dichotomously (*yes/no*): severe pain; nausea; and stress/anxiety. Furthermore, respondents were also asked whether decedents' wishes about care at the end of life were generally followed (*yes/no*), and whether the decedent received hospice care (*yes/no*). Additionally, respondents provided information on the knowledge/expertise and compassion of health professionals, which were scored along a 4-point scale ranging from *poor* to *excellent*. For purposes of modeling, these ratings were dichotomously recoded (Good/Excellent vs. Poor/Fair).

Quality of the death—The primary outcome of interest was the respondent's perception about the quality of the decedent's death. Assessments of quality of death came from survey respondents (i.e., family members) living in the same household as the decedent. This was measured using the item: “*Was your [relationship's] death a ‘good death’, or did things happen that made it a ‘bad death’?*” Thus, respondents selected from one of two options, either *good death* or *bad death*.

Analysis

Descriptive statistics were computed for all variables and stratified by good or bad death. T-tests and χ^2 goodness-of-fit tests were conducted to examine whether each potential correlate was significantly related to quality of death. Results from these analyses informed variable selection for a logistic regression testing the main effects of factors on quality of death. Predictors were included in the model if they were associated with quality of death and conceptually linked based on previous research.

We hypothesized that key clinically relevant factors, such as attention to non-medical care, high quality pain and symptom management and honoring patient wishes, are some of the reasons households that received hospice care are more likely to report a good death; and thus, inclusion of these factors in the full model would explain the effect of hospice involvement. To test this hypothesis, we first analyzed the proportion of good deaths by each clinically relevant factors associated with quality of death and hospice involvement. To further “unpack” the effect of hospice on quality of death, we also fit a series of nested and competing models to the data and compared them systematically. Predictor variables were ordered based on their hypothesized pathway of effect on good death in the following manner:

Demographics - gender, respondent age, spouse/non-spouse, race, age of decedent

Primary Independent Variable - hospice involvement

Clinical Relevant Independent Variables - severe pain, stress/anxiety, ratings of provider knowledge/expertise, ratings of provider compassion, receipt of conflicting information, physician attention to non-medical factors, and wishes followed.

Competing models focused on the change in the odds ratio to account for the relative impact of the selected independent variables on good death. Models were as follows:

Model 1: The bivariate effect of hospice on good death to identify the amount of variance in good death due to hospice involvement.

Model 2: Demographic characteristics were added to Model 1 to isolate the variance in good death due to hospice involvement when adjusting for demographics factors.

Models 3-9: In subsequent models, we independently introduced each of the seven associated clinically relevant factors to Model 2.

Model 10: All seven of the associated clinically relevant factors were then simultaneously added to Model 2. Thus, the full and final model examined the joint impact of the selected predictors in reference to the odds of experiencing a good death versus a bad death.

Furthermore, we separately computed the difference between ORs for hospice involvement in models 3-9 and model 10 and calculated the percent reduction in the OR. This elicited estimates of the relative impact of each clinically relevant factor on the effect of hospice involvement on good death.

Results

Sample Characteristics

As shown in table 1, in the total sample, 60% of respondents were female, 89% White, and averaged 56.6 years of age ($SD=17.9$). Decedents were most often the respondents' spouse/partner (46%) or parent (25%). Fifty four percent (54%) of decedents were male and, on average, 68.4 years old ($SD=13.2$) at the time of death. As table 2 displays, in general the quality of the death was favorable with 73% ($n=115$) of respondents reporting that the death of their family member was good, rather than bad (27%, $n=43$). Only one demographic characteristic, ethnicity, was associated with perceived quality of death. Latino/Hispanic respondents were much less likely to describe the decedent's death as good (29% compared to 75% for non-Latino/Hispanics; $p=.007$).

Identifying clinically relevant correlates associated with quality of death

The quality of a decedent's death was related to a number of clinically relevant factors. Large differences were observed when physicians paid attention to factors outside of direct medical care such as the family's support networks ($p=.009$) and when hospice was involved ($p=.008$). Seventy two percent (72%) of respondents who indicated that the decedent's doctor paid attention to non-medical issues also reported a good death, compared to 28% who reported a bad death. When hospice was involved, 73% of respondents reported a good death, as opposed to 27% who reported a bad death. When families received conflicting information from different doctors or health professional, respondents were more likely to report that the decedent's death was bad ($p=.025$). Quality of death was also associated with whether the decedent's wishes were followed ($p=.021$). Although the majority respondents indicated that the decedent's wishes had been honored, decedents whose wishes were not followed were more likely to have had a bad death. For decedents who had received cancer treatment, quality of death was associated with the presence of severe pain ($p=.007$) and

stress or anxiety ($p=.017$). When these symptoms were present, respondents were more likely to report a bad death.

In general, as assessments provider knowledge/expertise in handling medical issues improved, so too did the likelihood that the decedent's death was considered good ($p<.001$). In fact, 79% of respondents who had a good death indicated that the knowledge/expertise of their health care providers was either "good" or "excellent," compared to 21% who reported a bad death. Level of compassion among health care providers was similarly linked to quality of death. Better ratings of compassion among doctors and other health care providers were associated with a greater likelihood of a good death ($p=.021$). A large majority (81%) of respondents who described the decedent's death as good rated the compassion of providers as either "good" or "excellent," relative to 19% of respondents who reported a bad death. Figure 1 shows the proportion of respondents who reported a good death across these clinically relevant factors.

A number of factors were not associated with quality of death. Findings of non-significance were observed for: religiosity for both the respondent and decedent; decedents' reported optimism prior to death; doctor communication about the cure or terminality of the illness; length of diagnosis from the time of interview; and the presence of severe nausea during treatment. Since these variables were not associated with perceived quality of death, they were excluded from regression models. Respondents' income, educational attainment, marital status, religiosity and end-of-life preference for care were also excluded from primary analysis for the same reason. Therefore, the primary analysis involved the following predictors: respondent's gender, age, race (African American vs. White), ethnicity, spouse/non-spouse, decedent's age, knowledge/expertise and compassion of health care professionals, pain, stress/anxiety, provider attention to non-medical issues, receipt of conflicting information, hospice involvement, decedents' wishes followed.

Due to low cell counts within the subsample of Hispanic respondents, ethnicity was excluded from the final model. When the model was fit with ethnicity included, the odds of Latino/Hispanic respondents endorsing a good death over a bad death was 0.06 times that of non-Hispanics ($p = .02$). In other words, non-Latino/Hispanics respondents were 16.9 times more likely to endorse a good death versus bad death compared to Latino/Hispanics respondents. Obviously, these results should be interpreted with caution due to limitations of the sample size and analysis. Nonetheless these findings were surprising enough to warrant mention.

Unpacking the relationship between hospice involvement and quality of death

When examining the proportion of good deaths by clinically relevant factors and hospice involvement (Figure 2), in all cases the highest proportion of good deaths occurred when hospice care was combined with the desired response for each clinical outcome (absence of severe pain, for example, was considered desirable). Conversely, the lowest proportion of good deaths were observed when hospice was not involved *and* desirable clinically relevant factors were not present.

Regression models exploring the relative impact of clinically relevant factors on the effect of hospice involvement on quality of death resulted in the following: when hospice was singularly introduced (Model 1), it was associated with a good death (OR=2.604; $p=.009$). As table 3 shows, when demographic factors were included (Model 2), this resulted in a baseline odds ratio of 2.595 ($p=.013$) for good death when hospice was involved. We then introduced each clinically relevant factor separately into the model and examined the change in the odds ratio relating hospice involvement to good death (Models 3-9; data not shown). In the final model the knowledge/expertise of health care professionals positively predicted a good death in that a one unit increase in knowledge/expertise was associated with an increase in the odds of a good death over a bad death by a factor of 3.4. In this model, hospice involvement was only a marginally reliable predictor ($p=.08$) of good death. Thus, while hospice involvement produced a strong bivariate association with good death, this association disappeared in the full model (Model 10) as expected.

Figure 3. illustrates the relative contribution of clinical factors that relate to the association between hospice involvement and quality of death. When modeling the effect of hospice involvement on quality of death, and adjusting only for demographic characteristics (respondent gender, age, race, ethnicity, relationship, and age of decedent), when hospice was involved, the death was 2.6 times more likely to be described as “good” ($p=.013$). The absence of severe pain was the variable that most reduced the odds ratio relating hospice to good death. In order of greatest reduction in the odds ratio to least, lack of severe pain was followed by the decedent having his/her wishes followed, high ratings of provider knowledge/expertise (good/excellent), an absence of decedent stress or anxiety, and having a physician who attended to factors beyond direct medical care. The full model reduced the odds ratio relating hospice to good death by over a fifth (22%). Good/excellent ratings of provider compassion and receiving conflicting information from cancer care providers were negative confounders.

Discussion

Based on these results, the quality of death among patients with cancer in US households is generally good – but there is also much room for improvement. Among households reporting on the quality of an adult decedent's death, nearly three-quarters described the death as good. While the dying and death of a loved one is often difficult for families, health care providers can make a difference. Based on our findings, the perceived knowledge and expertise of providers had a direct effect on quality of death. Although the directionality of this relationship warrants further research, this suggests that oncology health care providers should strive to stay informed about current best practices for end-of-life care – including ways to improve communication about end-of-life matters, enhance bed-side compassion, manage pain and other distressing symptoms, and attend to non-medical factors like coping and social support. Providers should also be vigilant about tailoring treatments to patient wishes and timely referrals to hospice.

Latino/Hispanic individuals were much more likely to perceive a family member's death as bad. This adds to a growing body of research highlighting disconcerting disparities in end of life outcomes for minority groups.[20-23] This may also be indicative of different cultural

beliefs about death and dying. Indeed, the notion of a “good death” may not be an accepted part of the Latino/Hispanic cultural lexicon. Further research should investigate why these differences exist and ensure that instruments currently being used to evaluate end-of-life outcomes are culturally relevant to this population. When demographic characteristics were modeled (Table 2 Model 2), only respondent age, relationship of the respondent to the decedent (whether a spouse or not), and hospice involvement reliably predicted quality of death. Older individuals were more likely to describe the death as good. Since older adults are more likely to have experienced multiple deaths over their lifetime, perhaps their expectations about dying and death are less idealistic than younger generations. Additionally, spouses may be reluctant to describe the death of their intimate partner as good.

Unsurprisingly, hospice was strongly associated with quality of death, and our findings suggest that high quality pain management is the leading reason for this. This corroborates previous research demonstrating the superior pain relief provided by hospice compared to alternative forms of care at the end of life (e.g., hospitalization or long-stay nursing home care without hospice).[24-27] The beneficial effects of hospice on good/bad death were also explained by ensuring that patient preferences are honored. Hospice espouses a patient/family-centered model of care, which prioritizes the unique preferences of their diverse patient population. As quality improvement efforts in hospice shift toward using standardized measures, it is critical that hospices continue to give precedence to truly individualized care plans and differing patient/family preferences.

Attention to non-medical factors by physicians also appeared to have played a significant role in quality of death. Dying is not a medical phenomenon, but rather a natural part of the human condition with social, cultural, psychological, and spiritual implications. In cases involving advanced-stage malignancy and life-limiting prognoses, best practice often involves active collaboration with interdisciplinary team members (e.g., nurses, social workers, chaplains) to provide additional coping resources and support. At minimum, clinicians should acknowledge the vital role of social networks and family support when treating patients with life threatening illness. This is especially salient within the context of hospice, because the prevailing model of hospice care requires family caregivers to do the lion's share of the hands-on care – despite the fact that the vast majority of informal hospice caregivers are not medically trained and frequently feel unprepared.[28,29] Improving support and education for family caregivers will likely improve care for dying patients.

Perceptions about provider knowledge and expertise also explained the pathway between hospice involvement and quality of death. Because respondents were giving subjective accounts of provider knowledge/expertise, we suspect that this may be a proxy measure for observable elements related to provider professionalism, clear communication about clinical circumstances and treatment options, and perceived provider comfort with broaching difficult end-of-life topics.

Receipt of conflicting information was related to quality of death. Households that had received conflicting information during the course of cancer care were more likely to experience a bad death. While differences of opinion will always occur in the clinical

environment, patients and families should be given a balanced, realistic view of the risks and benefits of diagnostic tests and treatment options. Additionally, enhancing communication among interdisciplinary team members and improving transitions in care may reduce perceptions about competing or contradictory information. Conflicting information was also a negative confounder of the relationship between hospice involvement and quality of death. We surmise that the confounding effect was because a hospice referral often occurs after a shift in treatment focus from cure-oriented care to comfort-oriented care. This shift may necessarily involve changes in prognostic outlook that may be perceived by family members as conflicting information.

The findings of this study should be considered with respect to its limitations. Although the design of this study permits measured generalizability to the larger population, the reduced sample size increases the potential for error, particularly among subgroups. Since spouses had fewer missing data, they may be over-represented in the final model. Latino/Hispanic respondents were found to be much more likely to describe a decedent's death as bad compared to non-Latino/Hispanics. However, this strong, statistically significant effect is based on input from only seven respondents who identified as Latino/Hispanic, so the results may be due to chance alone. Future research should confirm whether these ethnic differences are observable in other samples. Furthermore, due to the lack of variation on whether decedents' wishes were followed, there was an inflated potential for Type 1 error. In addition, our results were also subject to recall bias since respondents were asked to provide information about a death that had occurred within the past five years. Also, due to the cross-sectional nature of the survey, causal relationships between predictors and the main outcome variable (quality of death) could not be definitively determined. For example, it is conceivable that the perceived quality of a decedent's death could alter a respondent's opinion about how knowledgeable healthcare providers were. Also related to this limitation, the clinically relevant factors we explored cannot be directly attributed to hospice. However, the associations provide compelling evidence that these factors contribute to the link between hospice involvement and a good death. Although, previous studies have examined the subjective preferences for care at the end of life and associations between clinically relevant factors and outcomes, to our knowledge no published research has explored the relative contribution of clinically relevant factors to the link between hospice involvement and quality of death.

Our analysis was limited to the array of measures available in the NSHAC. The available items did not fully capture the multidimensional scope of clinically relevant factors that have been conceptually linked to quality of death.[11] Being kept clean, for example, has been identified as an important facet of care at the very end of life that was not captured by the survey. Thus, our work should only be viewed as a first step in uncovering the links between clinically relevant factors and end of life outcomes. There is still much work left to do.

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Figure 1. Percent of respondents reporting a good death according to hospice involvement and statistically significant clinically relevant characteristics (N = 115)

*p<.05

**p<.01

***p<.001

† Based on Fisher's Exact test due to low cell counts.

Note - Associations between quality of death and severe nausea, as well as whether the physician had communicated whether the cancer could be cured or would be fatal, were not statistically significant.

Figure 2. Proportion of good deaths by clinically relevant factors and hospice involvement

Figure 3. Percent reduction in the odds ratio between hospice involvement and good death as clinically relevant factors were independently introduced to the model

The base logistic regression model adjusted for respondent gender, age, race, ethnicity, relationship to decedent (spouse/non-spouse), and age of decedent at the time of death. When hospice involvement was introduced to the base model, it was related to quality of death (OR=2.595; $p=.013$). The variables “received conflicting information” and “provider compassion” did not contribute to a reduction in the odds ratio of hospice on quality of death, therefore they were excluded from the figure.

Table 1
Characteristics of respondents and their decedents

Characteristics	Total (N=158)	
	%	Missing
<u><i>Decedent</i></u>		
Gender		0
Male	53.8	
Female	46.2	
Age (M±SD) [†]	68.4±13.2	0
<u><i>Respondent</i></u>		
Relationship		0
Spouse	45.6	
Parent	5.1	
Child	38.6	
Grandparent	5.1	
Other	5.7	
Age (M±SD) [†]	56.6±17.9	0
Gender		0
Male	40.5	
Female	59.5	
Race		1
White	88.5	
African American	7.0	
Other Minority	4.5	
Latino/Hispanic		1
Yes	4.4	
No	94.9	
Income		28
Less than \$25,000	38.5	
\$25,000-\$49,999	32.3	
\$50,000-\$74,999	13.1	
\$75,000-\$99,999	6.9	
\$100K+	9.2	
Education		2
Less than Grade 12	10.3	
Grade 12 or GED	37.8	
Business/technical/vocational school	5.8	
Some college	24.4	
College graduate	9.0	
Post graduate training/graduate school	12.8	
Marital Status		2

Characteristics	Total (N=158)	
	%	Missing
Married	20.9	
Living as married	4.4	
Divorced	8.2	
Separated	1.3	
Widowed	44.3	
Never been married	19.6	

[†] Age is a continuous variable therefore and means (standard deviations) are presented.

Table 2
Sample characteristics stratified by responses of good and bad death

Characteristics	Quality of Death		χ^2 (df)	p
	Good (N=115)	Bad (N=43)		
<u>Decedent</u>				
Gender, %			0.59 (1)	0.444
Male	55.7	48.8		
Female	44.3	51.2		
Age, y (M±SD) [†]	68.68±13.25	67.47±13.15	0.26 (1)	0.608
<u>Respondent</u>				
Relationship, %			5.82 (4)	0.213 ^{††}
Spouse	43.5	51.2		
Parent	7.0	-		
Child	40.0	34.9		
Grandparent	3.5	9.3		
Other	6.1	4.7		
Spouse (vs. Non-spouse), %	43.5	51.2	0.71 (1)	0.388
Age, y (M±SD) [†]	57.97±18.19	53.05±16.84	2.40 (1)	0.124
Gender, %			1.70 (1)	0.192
Male	37.4	48.8		
Female	62.6	51.2		
Race, %			0.01 (2)	0.997
White	88.6	88.4		
African American	7.0	7.0		
Other Minority	4.4	4.7		
Latino/Hispanic, % ^{**}			7.15 (1)	0.008
Yes	1.8	11.6		
No	98.2	88.4		
Income, %			4.39 (4)	0.356 ^{††}
Less than \$25,000	35.5	45.9		
\$25,000-\$49,999	33.3	29.7		
\$50,000-\$74,999	16.1	5.4		
\$75,000-\$99,999	5.4	10.8		
\$100K+	9.7	8.1		
Education, %			6.09 (5)	0.298 ^{††}
Less than Grade 12	9.7	11.6		
Grade 12 or GED	43.4	23.3		
Business/technical/vocational school	4.4	9.3		
Some college	22.1	30.2		
College graduate	8.0	11.6		
Post graduate training/graduate school	12.4	14.0		

Characteristics	Quality of Death		χ^2 (df)	p
	Good (N=115)	Bad (N=43)		
Marital Status, %			2.23 (5)	0.946 ^{††}
Married	21.7	18.6		
Living as married	4.3	4.7		
Divorced	8.7	7.0		
Separated	1.7	-		
Widowed	43.5	46.5		
Never been married	18.6	23.3		

*
p < .05

**
p < .01

[†] Age is a continuous variable therefore means (standard deviations) are presented.

^{††} P-value calculated despite low cell counts.

Table 3
Logistic regression models assessing association of demographics, clinical and provider variables with good vs. bad death

Parameter	Model 2				Model 10			
	OR	P	95% CI		OR	P	95% CI	
			Lower	Upper			Lower	Upper
Intercept	1.048	0.968	--	--	0.425	0.591	--	--
Hospice Involved (vs. Not Involved)	2.595	0.013	1.220	5.520	2.238	0.081	0.906	5.527
Male Respondent (vs. Female)	0.593	0.183	0.278	1.278	0.583	0.262	0.227	1.497
Respondent Age	1.049	0.013	1.010	1.088	1.040	0.065	0.998	1.085
Decedent Age at Death	0.979	0.254	0.943	1.016	0.971	0.170	0.930	1.013
White Respondent (vs. Non-White)	1.279	0.646	0.447	3.659	1.278	0.697	0.372	4.389
Spouse Respondent (vs. Non-Spouse)	0.230	0.024	0.065	0.821	0.148	0.014	0.032	0.679
No Severe Pain (vs. Yes)					2.011	0.289	0.552	7.323
No Severe Stress/Anxiety (vs. Yes)					1.120	0.842	0.367	3.416
Good/Excellent Provider Knowledge/Expertise (vs. Poor/Fair)					3.387	0.026	1.158	9.911
Good/Excellent Provider Compassion (vs. Poor/Fair)					1.070	0.910	0.331	3.458
MD Paid attention to Non-Medical Issues (vs. No Attention)					0.996	0.994	0.357	2.781
No Conflicting Information Received (vs. Yes)					1.515	0.422	0.549	4.178
Wishes Followed (vs. Not Followed)					3.310	0.165	0.610	17.962

Note: Estimates with p-values < .05 are shown in bold. Results from models 1 and 3 through 9 are not shown due to limited space. Data for all models are available from the corresponding author upon request.